

IN THE CLAIMS

1. (Currently Amended) A solid brazing component comprising: having a liquidus temperature above 840°F selected from the group consisting of wire, strip, foil and preforms, wherein the brazing component is made of an alloy consisting essentially of, in weight percent:

- (a) about 4-9% phosphorus;
- (b) about 0.1-10% tin;
- (c) about 0.1-15% nickel;
- (d) about 0.1-18% silver;
- (e) 0.001 [[up]] to about 3% silicon;
- (f) an amount of antimony that does not exceed [[up to]] about 4% ~~antimony~~;
- (g) an amount of manganese being no more than [[up to]] about 3%

~~manganese;~~

and the balance copper, the component having a liquidus temperature above 840°F and being selected from the group consisting of wire, strip, foil and preforms.

2. -4. (Canceled)

5. (Previously Presented) The component of claim 1 wherein the brazing component has a liquidus temperature less than about 1410°F and a solidus temperature less than about 1100°F.

6. (Previously Presented) The component of claim 5, wherein the alloy consists essentially of:

- (b) about 4-8% tin;
- (c) about 5-8% nickel;

- (d) about 1-18% silver; and
about 0.001-0.1% silicon.

7. (Previously Presented) The component of claim 6 wherein the alloy exhibits a major thermal arrest at a temperature below about 1250°F.

8. - 21. (Canceled)

22. (Currently Amended) A solid brazing component comprising: having a liquidus temperature above 840°F selected from the group consisting of wire, strip, foil and preforms;
~~wherein the brazing component is made of an alloy consisting essentially of, in weight percent:~~

(a) about 4-9% phosphorus;

(b) about 0.1-10% tin;

(c) about 0.1-15% nickel;

(d) up to about 18% silver;

(e) an amount of silicon, the amount of silicon ranging between a minimum and a maximum, the minimum being about 0.001% [-], the maximum being about 3% silicon;

(f) an amount of antimony that does not exceed [[up to]] about 4% antimony;

(g) up to about 3% manganese;

and the balance copper, the component having a liquidus temperature above 840°F and being selected from the group consisting of wire, strip, foil and preforms.

23. 24. (Cancelled)

25. The component of claim 22 wherein the alloy consists essentially of:

- (c) about 5-8% nickel.

26. -34. (Cancelled)

35. (Currently Amended) A solid brazing component comprising having a liquidus temperature above 840°F selected from the group consisting of: wire, strip, foil and preforms, wherein the brazing component is made of an alloy consisting essentially of, in weight percent:

- (a) about 4-10% phosphorus;
- (b) about 0.1-8% tin;
- (c) an amount of silicon, the amount of silicon ranging between a minimum and a

maximum, the minimum being about 0.001% [[-]], the maximum being about 3% silicon;

- (d) up to about 3% nickel;
- (e) up to about 18% silver;
- (f) an amount of antimony that does not exceed [[up to]] about 4% antimony;
- (g) up to about 3% manganese; and

the balance copper, with the proviso that the sum of tin and antimony does not exceed about 10%, the component having a liquidus temperature above 840°F and being selected from the group consisting of: wire, strip, foil and preforms.

36. (Previously Presented) The component of claim 35 wherein the brazing component has a liquidus temperature less than about 1300°F and a solidus temperature less than about 1200°F.

37. (Currently Amended) The component of claim 35 wherein the alloy consists essentially of:

- (a) about 6-7% phosphorus;
- (b) about 2-8% tin;
- (c) about [[0.001-]] 1% silicon;
- (f) [[up to]] the amount of antimony does not exceed about 2% ~~antimony~~; and
the balance copper.

38. (Previously Presented) The component of claim 37 wherein the alloy exhibits a major thermal arrest at a temperature below about 1275°F.

39. (Currently Amended) A ~~fluxless solid brazing~~ component for brazing without a flux, the component having a liquidus temperature above 840°F selected from the group consisting of: wire, strip, foil and preforms, wherein the brazing component consists of, in weight percent:

- (a) about 4-10% phosphorus;
- (b) a sum of antimony and tin not exceeding about 10%, the amount of tin being about 0.1-8% [[tin]];
- (c) an amount of silicon, the amount of silicon ranging between a minimum and a maximum, the minimum being about 0.001% [[-]], the maximum being about 3% silicon;
- (d) up to about 3% nickel;
- (e) up to about 18% silver;
- ~~(f) up to about 4% antimony;~~
- [[g]] f) up to about 3% manganese; and
the balance copper, ~~with the proviso that the sum of tin and antimony does not exceed about 10%~~ the component having a liquidus temperature above 840°F and being selected from the group consisting of: wire, strip, foil and preforms.

40. (Previously Presented) The component of claim 39 wherein the brazing component has a liquidus temperature less than about 1300°F and a solidus temperature less than about 1200°F.

41. (Currently Amended) The component of claim 39 wherein the brazing component consists of:

- (a) about 6-7% phosphorus;
 - (b) about 2-8% tin and about 2% antimony;
 - (c) at least about [[0.001-]] 0.1% silicon;
 - ~~(f) up to about 2% antimony;~~ and
- the balance copper.

42. (Previously Presented) The component of claim 41 wherein the alloy exhibits a major thermal arrest at a temperature below about 1275°F.

43. (Previously Presented) The component of claim 1 with the proviso that the sum of tin and antimony does not exceed about 10%.

44. (Previously Presented) The component of claim 22 with the proviso that the sum of tin and antimony does not exceed about 10%.

45. (New) A solid brazing component having a liquidus temperature above 840°F, the component comprising:

- one of a wire, strip, foil and preformed wire;
- a phos-copper base alloy consisting essentially of at least one of:

an effective amount of nickel and tin for a low brazing temperature of the component wherein the liquidus temperature ranges from about 1134-1404 °F; an MTA ranges from about 1114-1296 °F; and a solidus temperature ranging from about 1037-1241 °F;

an effective amount of nickel, tin and antimony for a low brazing temperature of the component wherein the liquidus temperature ranges from about 1134-1404 °F; an MTA ranges from about 1114-1296 °F; and a solidus temperature ranging from about 1037-1241 °F;

an effective amount of nickel and at least one of tin and silicon for a corrosion resistance being any one of: 29% more than BCuP-5 alloy, 25% more than BCuP-4 alloy; and 27% more than BCuP-2 alloy;

an effective amount of nickel and at least one of tin and silicon to form a visually distinguishable braze in a copper joint without the use of a flux, the braze not forming a black oxide;

an effective amount of nickel and at least one of tin and silicon without an effective amount of silver to form a visually distinguishable braze in a copper joint without the use of a flux, the braze forming a cap; and

an effective amount of nickel and manganese for a Rockwell B hardness in a range of 85-91.

46. (New) A brazing component for brazing a copper joint without a flux, the brazing component comprising:

a solid being any one of a wire, strip, foil or preform having a liquidus temperature above 840°F; and

a phos-copper base alloy forming the solid, the alloy consisting essentially of, in weight percent:

about 4 - 10% phosphorus;

about 0.1 -15% nickel;

an amount of antimony not exceeding about 4%;

an amount of tin such that the sum of tin and antimony does not exceed about 10%;

up to about 18% silver;

an amount of silicon ranging from about 0.1% to less than 1%;

about 3% manganese; and

the balance copper.

47. (New) The brazing component of claim 46, wherein the amount of antimony is about 4%.
48. (New) The brazing component of claim 46, wherein the amount of silicon is greater than 0.1%.
49. (New) The brazing component of claim 46, wherein the amount of silicon is about 0.1%.
50. (New) The brazing component of claim 46, wherein the alloy tests to a Rockwell B hardness in a range of 85-91.
51. (New) The brazing component of claim 46, wherein the component comprises no silver.

52. (New) The brazing component of claim 46, wherein the component has a liquidus temperature ranging from about 1134-1404 °F; an MTA ranging from about 1114-1296 °F; and a solidus temperature ranging from about 1037-1241 °F.

53. (New) A brazing component for brazing a copper joint and having a liquidus temperature above 840°F, the brazing component comprising:

a solid being any one of a wire, strip, foil or preform; and

a phos-copper base alloy consisting essentially of, in weight percent:

about 4 - 10% phosphorus;

about 0.1 -15% nickel;

an amount of antimony not exceeding about 4%;

an amount of tin such that the sum of tin and antimony does not exceed

about 10%;

up to about 18% silver;

up to about 3% silicon;

up to about 3% manganese; and

the balance copper.

54. (New) The brazing component of claim 53, wherein the amount of antimony is about 4%.

55. (New) The brazing component of claim 53, wherein the amount of silicon ranges from about 0.1% to less than 1%.

56. (New) The brazing component of claim 55, wherein the amount of silicon is about 0.1%.

57. (New) The brazing component of claim 53, wherein the alloy tests to a Rockwell B hardness in a range of 85-91.
58. (New) The brazing component of claim 53, wherein the component comprises no silver.
59. (New) The brazing component of claim 53, wherein the component has a liquidus temperature ranging from about 1134-1404 °F; an MTA ranging from about 1114-1296 °F; and a solidus temperature ranging from about 1037-1241 °F.